

Application No. 10/535,360
Technology Center 3754
Submission Accompanying RCE under 37 CFR §1.114

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (Currently amended): A flexible, tubular metal device with an internal diameter up to 60 millimeters, the device comprising a metal wall in which are formed one or more nonhelical corrugated convolutions that define a nonhelical corrugated outside surface of the device and a nonhelical corrugated inside surface of the ~~device and are oriented perpendicular to a longitudinal axis of the~~ device, each of the convolutions having rounded radially-outward portions and rounded radially-inward portions axially adjacent each other, ~~oppositely-disposed rounded top portions and bottom portions~~, the outside surface defined by each convolution of the device having first and second sections with change positions therebetween, the first section of each convolution ~~each of the first sections~~ extending from one of the change positions to another of the change positions via one of the radially-outward top portions, the second section of each convolution ~~each of the second~~

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~~sections~~ extending from one of the change positions to another of the change positions via one of the radially-inward ~~bottom~~ portions, the length of each of the first sections being at least 10% longer than the length of each of the second sections, the outside surface of each convolution having a non-constant curvature derived from a curve that is continuous in the first and second sections and defined by the intersection of the outside surface and a plane through the ~~a~~ longitudinal axis of the device, the curvature of the outside surface being numerically smaller at each of the radially-outward ~~top~~ portions than at each of the radially-inward ~~bottom~~ portions, the curve within each of the first sections having one global maximum located within the radially-outward portion thereof, the curve within each of the second sections having a global minimum located at the radially-inward portion thereof, the curvature of the curve changing sign only once at each of the change positions.

Claim 2 (Previously presented): A device according to claim 1, wherein the length of each of the first sections is at least 50% longer than the length of each of the second sections.

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Claim 3 (Currently amended): A device according to claim 1,
wherein the curvature of the convolutions is numerically at least 20% smaller
within the radially-outward ~~top~~ portions than within the radially-inward ~~bottom~~
portions.

Claim 4 (Previously presented): A device according to claim 1,
wherein the convolutions have a pitch-height ratio (q) of about 0.7 to about
1.0.

Claim 5 (Canceled)

Claim 6 (Currently amended): A device according to claim 1,
wherein the curvature of the curve within each first section has a local
minimum curvature at the global maximum. ~~between each adjacent pair of the~~
~~top and bottom portions thereof.~~

Claim 7 (Currently amended): A device according to claim 1,
wherein ~~claim 5, wherein a section of~~ the curve comprises a curve portion
that extends from a point corresponding to the global minimum at a first of the

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radially-inward ~~bottom~~ portions, through the global maximum at an immediately adjacent one of the radially-outward ~~top~~ portions, and to a point corresponding to the global minimum at a second of the radially-inward ~~bottom~~ portions immediately adjacent the one of the radially-outward ~~top~~ portions, the section of the curve being symmetric about an axis perpendicular to the longitudinal axis and through the global maximum within the immediately adjacent one of the radially-outward ~~top~~ portions.

Claim 8 (Previously presented): A device according to claim 1, wherein a majority of the convolutions are substantially identical.

Claim 9 (Previously presented): A device according to claim 1, wherein the device is made of an extruded metal alloy pipe and the convolutions are formed in a deep drawing process.

Claim 10 (Previously presented): A device according to claim 9, wherein the metal alloy is stainless steel or an aluminium alloy.

Claim 11 (Currently amended): A flexible, tubular bellows with an

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internal diameter up to 60 millimeters, the bellows being defined by a metal wall in which are formed nonhelical corrugated convolutions that define a nonhelical corrugated outside surface of the bellows and a nonhelical corrugated inside surface of the bellows and are oriented perpendicular to a longitudinal axis of the bellows, each of the convolutions having rounded diametrically-opposed radially-outward portions and rounded diametrically-opposed radially-inward portions axially adjacent each other, ~~oppositely-disposed rounded top and bottom portions~~, the outside surface defined by each convolution of the bellows having first and second sections with change positions therebetween, the first section of each convolution ~~each of the first sections~~ extending from one of the change positions to another of the change positions via one of the radially-outward top portions, the second section of each convolution ~~each of the second sections~~ extending from one of the change positions to another of the change positions via one of the radially-inward bottom portions, the length of each of the first sections being at least 10% longer than the length of each of the second sections, the outside surface of each convolution having a non-constant curvature derived from a curve that is continuous in the first and second sections and defined by the intersection of the outside surface and a plane through a longitudinal axis of the bellows,

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the curvature of the outside surface being numerically smaller at each of the radially-outward ~~top~~ portions than at each of the radially-inward ~~bottom~~ portions, the curve within each of the first sections having one global maximum located at the radially-outward portion thereof, the curve within each of the second sections having a global minimum located at the radially-inward portion thereof, the curvature of the curve being zero at the change positions and changing sign only once between adjacent pairs of the radially-outward and radially-inward ~~top and bottom~~ portions at the change position therebetween.

Claim 12 (New): A device according to claim 1, wherein the curve is at least two times differentiable.

Claim 13 (New): A device according to claim 1, wherein the curve is at least two times differentiable.